Health Update:

Update: Avian Influenza A (H7N9)

June 7, 2013

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Office of the Director
912 Wildwood
P.O. Box 570
Jefferson City, MO 65102
Telephone: (800) 392-0272
Fax: (573) 751-6041
Web site: http://www.health.mo.gov

Health Update
June 7, 2013

FROM: GAIL VASTERLING
ACTING DIRECTOR

SUBJECT: Update: Avian Influenza A (H7N9)

On May 10, 2013, the Missouri Department of Health and Senior Services (DHSS) issued a Health Advisory entitled "Avian Influenza A (H7N9)." It provided information on the epidemiology of avian influenza A (H7N9), as well as recommendations for testing, treatment, and infection control. On June 7, 2013, the Centers for Disease Control and Prevention (CDC) updated the current situation regarding H7N9, and provided updated recommendations on who should be tested for the virus in the United States. This Health Update contains the new information and recommendations from CDC. If a patient meets the criteria described below, DHSS should immediately be contacted regarding specimen collection and facilitation of confirmatory testing.

CDC HEALTH UPDATE

Distributed via the CDC Health Alert Network
June 7, 2013,
CDCHAN-00347

Human Infections with Avian Influenza A (H7N9) Viruses

This health advisory provides an **update** on the avian influenza A (H7N9) virus [H7N9] situation and includes new recommendations on who should be tested for H7N9 in the United States. This document replaces guidance published on April 5, 2013, in CDC Health Advisory 344 "Human Infections with Novel Influenza A (H7N9) Viruses," found at http://emergency.cdc.gov/HAN/han00344.asp. The updated guidance reflects the most current epidemiology of H7N9 cases, which indicates that almost all H7N9 human infections have resulted in severe respiratory illness; H7N9 has been found rarely among those with milder disease. For that reason, CDC is changing its recommendations for H7N9 testing: **The primary changes from previous guidance are (i) a new recommendation to test only patients with an appropriate exposure history and severe respiratory illness requiring hospitalization and (ii) a request that only confirmed and probable cases of human infection with H7N9 be reported to CDC.** In the previous guidance issued on April 5, CDC recommended that all persons with relevant exposure history and illness compatible with influenza, regardless of severity be tested. CDC will continue to update these recommendations as more information becomes available. The current guidance is consistent with interim surveillance recommendations by the World Health Organization for H7N9 found at http://www.who.int/influenza/human_animal_interface/influenza_h7n9/InterimSurveillanceRecH7N9_10May13.pdf

Summary and Background

As of June 3, 2013, Chinese public health officials have reported >130 cases of human infection with H7N9 from 10 provinces and municipalities in mainland China and Taiwan [1, 2]. Most patients were hospitalized with severe respiratory illness and reported poultry contact prior to illness onset [2, 3]. Preliminary results from influenza-like illness surveillance suggest that H7N9 has not caused widespread mild illness in China [4].

Although several clusters of human infection with H7N9 have been identified in China, **sustained person-to-person transmission of the virus has not been demonstrated. At this time, no cases of human infection with H7N9 have been detected in the United States**, despite testing of >60 persons with respiratory illness who reported recent travel to China.

Clinicians should consider the possibility of H7N9 infection in persons presenting with respiratory illness requiring hospitalization and an appropriate travel or exposure history. Influenza diagnostic testing in patients with severe respiratory illness for whom an etiology has not been confirmed may identify human cases of H7N9.

Confirmed and **probable** cases of human infection with H7N9 in the United States should be reported to CDC within 24 hours of initial detection. See http://www.cdc.gov/flu/avianflu/h7n9/case-definitions.htm. However, state health departments are encouraged to investigate all potential cases of H7N9 infection as described below in order to determine case status.

Interim Recommendations for Clinicians and State and Local Health Departments

CDC recommends the following testing practices based on the current epidemiology of H7N9 cases.

Case Investigation and Testing

- Patients who meet both the clinical and exposure criteria described below should be considered for H7N9 testing by reverse-transcription polymerase chain reaction (RT-PCR) methods. Decisions on diagnostic testing for influenza using RT-PCR should be made using available clinical and epidemiologic information, and additional persons in whom clinicians suspect H7N9 infection should also be tested.

Clinical Illness Criteria

i. Patients with new-onset severe acute respiratory infection **requiring hospitalization** (i.e., illness of suspected infectious etiology that is severe enough to require inpatient medical care in the judgment of the treating clinician).

AND

ii. Patients for whom no alternative infectious etiology is identified.

Exposure Criteria

i. Patients with recent travel (within 10 days of illness onset) to areas where human cases of H7N9 have become infected or to areas where avian influenza A (H7N9) viruses are known to be circulating in animals [1].

OR

i. Patients with recent travel (within 10 days of illness onset) to areas where human cases of H7N9 have become infected or to areas where avian influenza A (H7N9) viruses are known to be circulating in animals [1].

ii. Patients who have had recent close contact (within 10 days of illness onset) with confirmed cases of human infection with H7N9. Close contact may be regarded as coming within about 6 feet (2 meters) of a confirmed case while the case was ill (beginning 1 day prior to illness onset and continuing until resolution of illness). Close contact includes healthcare personnel providing care for a confirmed case, family members of a confirmed case, persons who lived with or stayed overnight with a confirmed case, and others who have had similar close physical contact.

- If infection with H7N9 is suspected based on current clinical and epidemiological screening criteria recommended by public health authorities, respiratory specimens should be collected with appropriate infection control precautions for novel virulent influenza viruses and sent to the state or local health department for testing. Clinicians should obtain a respiratory specimen from these patients, place the swab or aspirate in viral transport medium, and contact their state or local health department to arrange transport and request a timely diagnosis at a state public health laboratory or CDC. **Viral culture should not be attempted in these cases**. For additional guidance on diagnostic testing of patients under investigation for H7N9 infection, please see http://www.cdc.gov/flu/avianflu/h7n9/specimen-collection.htm.

- **DHSS strictly enforces these testing eligibility criteria in order to preserve limited available testing resources and to support only those appropriate investigations that facilitate successful public health interventions and surveillance.**

- **Medical providers caring for a patient who meets these criteria should immediately contact DHSS at 800/392-0272 (24/7) to discuss sending specimens for testing at the Missouri State Public Health Laboratory (MSPHL). Note that before any specimen is sent to MSPHL, DHSS staff must first be consulted. After consultation and determination that the patient meets the criteria for testing, contact MSPHL at 573/751-3334 or 800/392-0272 for guidance on specimen collection and shipping prior to collecting the specimens. This will help ensure that proper specimens are obtained in the right quantity, and that they are packed and transported properly.**

- Commercially available rapid influenza diagnostic tests (RIDTs) may not detect H7N9 viruses in respiratory specimens. Therefore, a negative rapid influenza diagnostic test result does not exclude infection with H7N9. In addition, a positive test result for influenza A cannot confirm avian influenza virus infection because these tests cannot distinguish between influenza A virus subtypes (they do not differentiate between human influenza A viruses and novel3 influenza viruses). Therefore, when RIDTs are positive for influenza A and there is concern for novel influenza A virus infection, respiratory specimens should be collected and sent for RT-PCR testing at a state public health laboratory **[according to the protocol in the previous bullet point]**. Clinical treatment decisions should not be made on the basis of a negative rapid influenza diagnostic test result since the test has only moderate sensitivity (http://www.cdc.gov/flu/professionals/diagnosis/clinician_guidance_ridt.htm).

Infection Control

Clinicians should be aware of appropriate infection control guidelines for patients under investigation for infection with novel influenza A viruses. For guidance on infection control precautions for H7N9 see http://www.cdc.gov/flu/avianflu/h7n9-infection-control.htm. **These infection control measures should be instituted immediately whenever a case is first suspected. Note that this guidance recommends a higher level of infection control measures than for seasonal influenza.**

Treatment

For guidance on treatment of patients under investigation for H7N9 with antiviral medications, or for guidance on antiviral chemoprophylaxis of exposed contacts, see http://www.cdc.gov/flu/avianflu/h7n9- antiviral-treatment.htm.

For More Information

- CDC avian influenza A (H7N9) virus information is available at: http://www.cdc.gov/flu/avianflu/h7n9-virus.htm.

- WHO Situation Updates on avian influenza are available at: http://www.who.int/influenza/human_animal_interface/avian_influenza/archive/en/index.html.
- WHO "Frequently Asked Questions on human infection with A (H7N9) virus, China" is available at: http://www.who.int/influenza/human_animal_interface/faq_H7N9/en/index.html.
- The Chinese Center for Disease Control and Prevention (China CDC) "Questions and Answers about human infection with A (H7N9) avian influenza virus" is available at: http://www.chinacdc.cn/en/research_5311/FAQ/201304/t20130418_80053.html.
- CDC general information about avian influenza viruses and how they spread is available at: http://www.cdc.gov/flu/avianflu/avian-in-humans.htm.

End Notes:

1. As of June 3, 2013, China was the only country where H7N9 viruses were known to be circulating in animals or where human cases have become infected. Patients with direct or close contact with wild birds or poultry, or animal settings, such as live poultry markets while traveling in these areas should be strongly considered for H7N9 testing. For more information on countries affected, please see the CDC avian influenza A (H7N9) information page at http://www.cdc.gov/flu/avianflu/h7n9-virus.htm.
2. Contact investigation protocols for confirmed cases may supersede the recommendations described here; testing of close contacts with *any level* of respiratory illness may be pursued, if in the judgment of the investigators, this is warranted.
3. Influenza viruses that do not typically infect humans are called "novel" influenza viruses; this includes influenza viruses that typically infect birds and swine.

References:

1. Centers for Disease Control and Prevention. Emergence of Avian Influenza A(H7N9) Virus Causing Severe Human Illness - China, February-April 2013. MMWR **2013**; 62(18): 366-71. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6218a6.htm?s_cid=mm6218a6_w
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4. Xu C, Havers F, Wang L, Chen T, Shi J, Wang D. Monitoring avian influenza A(H7N9) virus through national influenza-like illness surveillance, China. Emerging Infectious Diseases [Internet], **2013** Jul [*June 3, 2013*] http://dx.doi.org/10.3201/eid1908.130662.

For links to additional information, see DHSS' Avian Influenza website at: http://health.mo.gov/emergencies/panflu/avian.php.

Questions should be directed to DHSS' Bureau of Communicable Disease Control and Prevention at 573/751-6113, or 800/392-0272 (24/7).

Health Update:

Updated Guidance for Evaluation of Severe Respiratory Illness Associated with Middle East Respiratory Syndrome Coronavirus (MERS-CoV)

August 13, 2013

This document will be updated as new information becomes available. The current version can always be viewed at http://www.health.mo.gov

The Missouri Department of Health & Senior Services (DHSS) is now using 4 types of documents to provide important information to medical and public health professionals, and to other interested persons:

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Health Update
August 13, 2013

FROM: **GAIL VASTERLING**
ACTING DIRECTOR

SUBJECT: **Updated Guidance for Evaluation of Severe Respiratory Illness Associated with Middle East Respiratory Syndrome Coronavirus (MERS-CoV)**

On June 10, 2013, the Missouri Department of Health and Senior Services (DHSS) issued a Health Advisory entitled "Updated Guidelines for Evaluation of Severe Respiratory Illness Associated with MERS-CoV." On August 12, 2013, the Centers for Disease Control and Prevention (CDC) provided updated guidance on who should be tested for MERS-CoV infection, as well as information on changes to CDC's "probable case" definition, and on what specimens should be obtained when testing for MERS-CoV. This DHSS Health Update contains the updated guidance and information from CDC, and also provides instructions for submitting clinical specimens to the Missouri State Public Health Laboratory (MSPHL) for MERS-CoV testing.

The following is taken from the CDC Health Update entitled "Notice to Healthcare Providers and Public Health Officials: Updated Guidance for the Evaluation of Severe Respiratory Illness Associated with Middle East Respiratory Syndrome Coronavirus (MERS-CoV)," distributed by the CDC Health Alert Network, August 12, 2013.

Summary
The Centers for Disease Control and Prevention (CDC) continues to work closely with the World Health Organization (WHO) and other partners to better understand the public health risks posed by Middle East Respiratory Syndrome Coronavirus (MERS-CoV). To date, no cases have been reported in the United States. The purpose of this health update is 1) to provide updated guidance to healthcare providers and state and local health departments regarding who should be tested for MERS-CoV infection, 2) to make them aware of changes to CDC's "probable case" definition, and 3) to clarify what specimens should be obtained when testing for MERS-CoV. Please disseminate this information to infectious disease specialists, intensive care physicians, primary care physicians, and infection preventionists, as well as to emergency departments and microbiology laboratories.

Background
MERS-CoV, formerly called novel coronavirus, is a beta coronavirus that was first described in September 2012. As of August 12, 2013, 94 laboratory-confirmed cases have been reported to WHO. Of those cases, 49% (46) were fatal. All diagnosed cases were among people who resided in or traveled from four countries (Kingdom of Saudi Arabia, United Arab Emirates, Qatar, or Jordan) within 14 days of their symptom onset, or who had close contact with people who resided in or traveled from those countries. Cases with a history of travel from these countries or contact with travelers from these countries have been identified in residents of France, the United Kingdom, Tunisia, and Italy. **To date, no cases have been reported in the United States.** The most up-to-date details about the number of MERS-CoV cases and deaths by country of residence are on CDC's MERS website at http://www.cdc.gov/coronavirus/mers/index.html.

Updates to Interim Guidance and Case Definitions

Interim Guidance for Health Professionals: Patients in the U.S. Who Should Be Evaluated
CDC has changed its criteria for who should be evaluated for MERS-CoV. In the previous guidance (HAN 348, June 7, 2013), CDC did not recommend MERS-CoV testing for people whose illness could be explained by another etiology. The **new guidance**, available at http://www.cdc.gov/coronavirus/mers/interim-guidance.html, states that, in patients who meet certain clinical and epidemiologic criteria, testing for MERS-CoV and other respiratory pathogens can be done simultaneously and that positive results for another respiratory pathogen should not necessarily preclude testing for MERS-CoV.

The new guidance also clarifies recommendations for investigating clusters of severe acute respiratory illness when there is not an apparent link to a MERS-CoV case. Clusters* of patients with severe acute respiratory illness (e.g., fever and pneumonia requiring hospitalization) should be evaluated for common respiratory pathogens and reported to local and state health departments. If the illnesses remain unexplained, testing for MERS-CoV should be considered, in consultation with state and local health departments.

For CDC's updated interim guidance for healthcare professionals, see http://www.cdc.gov/coronavirus/mers/interim-guidance.html.

Case Definitions
CDC has not changed the case definition of a confirmed case, but the criteria for laboratory confirmation have been clarified. CDC has changed its definition of a probable case so that identification of another etiology does not exclude someone from being classified as a "probable case."

For CDC's updated case definitions, see http://www.cdc.gov/coronavirus/mers/case-def.html.

CDC may change its guidance about who should be evaluated and considered a case as we learn more about the epidemiology of MERS-CoV infection and risk of transmission.

Interim Guidance about Testing of Clinical Specimens
CDC recommends collecting multiple specimens from different sites at different times after symptom onset. Lower respiratory specimens are preferred, but collecting nasopharyngeal and oropharyngeal (NP/OP) specimens, as well as stool and serum, are strongly recommended. This will increase the likelihood of detecting MERS-CoV infection. For more information, see CDC's Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens at http://www.cdc.gov/coronavirus/mers/guidelines-clinical-specimens.html. Many state health department laboratories are approved for MERS-CoV testing using the CDC rRT-PCR assay. Contact your state health department to notify them of people who should be evaluated for MERS-CoV and to request MERS-CoV testing.

[If a Missouri medical provider has a patient that appears to meet the above-mentioned CDC criteria for who should be evaluated for MERS-CoV, that provider should immediately contact DHSS at 800/392-0272 (24/7) to discuss sending specimens for testing at the Missouri State Public Health Laboratory (MSPHL). Note that before any specimen is sent for testing, DHSS staff must first be consulted at 800/392-0272. After consultation with DHSS and determination that the patient meets the criteria for testing, the medical provider should then contact MSPHL at 573/751-3334 or 800/392-0272 for guidance on specimen collection and shipping prior to collecting the specimens. This will help ensure that proper specimens are obtained in the right quantity, and that they are packed and transported properly.]

*In accordance with the WHO's guidance for MERS-CoV, a cluster is defined as two or more persons with onset of symptoms within the same 14-day period, and who are associated with a specific setting such as a classroom, workplace, household, extended family, hospital, other residential institution, military barracks, or recreational camp. See WHO's "Interim Surveillance Recommendations for Human Infection with Middle East Respiratory Syndrome Coronavirus" at http://www.who.int/csr/disease/coronavirus_infections/InterimRevisedSurveillanceRecommendations_nCoVinfection_27Jun13.pdf.

Questions should be directed to DHSS' Bureau of Communicable Disease Control and Prevention at 573/751-6113, or 800/392-0272 (24/7).

Health Update:

Missouri Recommendations for the Use of Tuberculin During the Nationwide Shortage

September 11, 2013

This document will be updated as new information becomes available. The current version can always be viewed at http://www.health.mo.gov

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Fax: (573) 751-6041
Web site: http://www.health.mo.gov

Health Update
September 11, 2013

FROM: GAIL VASTERLING
ACTING DIRECTOR

SUBJECT: **Missouri Recommendations for the Use of Tuberculin During the Nationwide Shortage**

On April 12, 2013, the Missouri Department of Health and Senior Services (DHSS) distributed information from the Centers for Disease Control and Prevention (CDC) that provided patient care and public health recommendations in the context of the nationwide shortage of tuberculosis skin test (TST) antigens.[1] Then, on September 4, DHSS sent out a CDC Health Update[2] which provided updated guidance (see http://health.mo.gov/emergencies/ert/alertsadvisories/pdf/cdcHU90413.pdf). The recommendations below provide additional guidance to Missouri medical providers and local public health agencies (LPHAs).

CDC has notified state tuberculosis (TB) programs that the nationwide shortage of tuberculin (both TUBERSOL® and APLISOL®) is expected to continue for several more months. Earlier reports were that the shortage would lessen in June 2013, when TUBERSOL® production was expected to resume. According to CDC, "The current projection for restoration of normal production of Tubersol is sometime in the fall, perhaps October."

Providers may be able to obtain 10-test vials of TUBERSOL® directly from the company by ordering online at VaccineShoppe.com, or contacting Sanofi Pasteur at 1-800-VACCINE (1-800-822-2463).

Recommendations for the Use of Tuberculin During the Nationwide Shortage

General Principles:
During the shortage, DHSS recommends that providers, LPHAs, correctional facilities, and health care settings:

1. Do **NOT** administer TSTs to persons who have no risk factors for TB or to persons with a documented previous history of a positive TST or TB disease.

2. Substitute interferon gamma release assays (IGRAs) for TSTs when feasible. IGRAs can be used in most situations in which the TST is indicated, and are preferred for people who have received BCG vaccine.[3,4] QuantiFERON®-TB Gold In-Tube and T-SPOT®.*TB* have FDA approval for TB testing. IGRAs may not be available in all practice settings. The Missouri State Public Health Laboratory does not perform IGRA testing. DHSS does not maintain a list of IGRA providers; please contact your local hospital laboratory or laboratory vendor.

3. Temporarily defer TSTs for certain persons if tuberculin supply is low. The **highest priorities for tuberculin use are**:
   a. Evaluating persons with suspected active TB disease,
   b. TB contact investigations,
   c. Persons at high risk of progressing to active TB, if infected (e.g., HIV+, age <5).
   d. Evaluating "Class B" immigrants and refugees; however, IGRAs are preferred for BCG-vaccinated persons.

4. Continue to ensure that persons with symptoms of active TB disease receive immediate medical evaluation.

5. Follow the recommendations in the table below for institutional/provider TB testing required by law. DHSS notes that these recommendations will be taken into account when inspecting and conducting complaint investigations of facilities and providers during this nationwide shortage.

6. Tuberculin may become available from some suppliers or in some areas sooner than others. Facilities should continue to periodically check with their suppliers so that they can obtain tuberculin and resume testing as soon as possible.

Recommendations for Prioritizing Tuberculin Use in Specific Settings		
Setting	**Group**	**Recommendations**
Correctional Facilities	Offenders	**At time of admission**: Conduct TB symptom screen. Use IGRA if available. If IGRA not available, administer one TST (county jails should postpone TST until day 11 or 12 of confinement). If tuberculin supply is low, defer second step TST until shortage resolves. If not able to obtain any tuberculin, defer both TSTs until shortage resolves. **Annual re-testing:** Conduct TB symptom screen. Use IGRA if available. If IGRA not available, defer annual TST until shortage resolves. **Testing offenders is a higher priority than testing employees.** If necessary, use limited supplies for testing offenders and defer employee testing until shortage resolves.
Correctional Facilities	Employees	**At time of hire:** Conduct TB symptom screen. Use IGRA if available. If IGRA not available, administer one TST and defer second step TST until tuberculin shortage resolves. If not able to obtain any tuberculin, defer both TSTs until shortage resolves. **Annual re-testing:** Conduct TB symptom screen. Use IGRA if available. If IGRA not available, defer annual TST until shortage resolves. **Testing offenders is a higher priority than testing employees.** If necessary, use tuberculin for testing offenders and defer employee testing until shortage resolves.

Setting	Group	Recommendations
Health Care Settings	Employees	**At time of hire:** Conduct TB symptom screen. Use IGRA if available. If IGRA not available, administer one TST and defer second step TST until shortage resolves. If not able to obtain any tuberculin, defer both TSTs until shortage resolves. **Annual re-testing:** Conduct TB symptom screen. Use IGRA if available. If IGRA not available, defer annual TST until tuberculin shortage resolves.
All Settings	Contact investigation	Continue to use TST or IGRA to evaluate close contacts of persons with infectious (i.e., pulmonary or laryngeal) TB disease. Consult DHSS or the LPHA for guidance in identifying who should be included in contact testing.
Public Health	Class B and refugee health assessments	IGRA preferred. If not available, do one TST. Two-step TST testing is not indicated. Conduct TB symptom screen and other testing as medically indicated.

Questions should be directed to DHSS' Bureau of Communicable Disease Control and Prevention, TB Program at 573/751-6113.

References

1. CDC Info Service. Nationwide Shortage of Tuberculin Skin Test Antigens: CDC Recommendations for Patient Care and Public Health Practice. April 12, 2013. http://emergency.cdc.gov/HAN/han00345.asp
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3. CDC. Updated Guidelines for using interferon gamma release assays to detect *Mycobacterium tuberculosis* infection — United States, 2010. *MMWR* 2010;59 (RR-5). http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5905a1.htm?s_cid=rr5905a1_w
4. CDC. Interferon-Gamma Release Assays (IGRAs) - Blood Tests for TB Infection (fact sheet). http://www.cdc.gov/tb/publications/factsheets/testing/IGRA.htm